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NOAA and its Partners Celebrate 20th Anniversary of International Search and Rescue Satellite Aided Tracking Program

This year marks the 20th anniversary of the international life-saving program known as Cospas-Sarsat. Since its inception in 1982, more than 14,000 people have been rescued worldwide, including 5,000 in the United States.

Cospas-Sarsat is a search and rescue (SAR) system that uses United States and Russian satellites to detect and locate emergency beacons indicating distress. The beacon transmitters are carried by individuals or aboard aircraft and ships. In the United States, the program is operated and funded by the Commerce Department's National Oceanic and Atmospheric Administration (NOAA), the U.S. Coast Guard, the U.S. Air Force, and the National Aeronautics and Space Administration.

NOAA operates a series of polar-orbiting and geostationary environmental satellites that detect and locate aviators, mariners and land-based users in distress. These satellites, along with a network of ground stations and the U.S. Mission Control Center in Suitland, Md., are part of the Cospas-Sarsat program, whose mission is to relay distress signals to the international SAR community.

Sponsored by Canada, France, Russia, and the United States, and started during the Cold War, the system operates 24 hours a day, 365 days a year and aims to reduce the time required to alert rescue authorities whenever a distress situation occurs.

"The goals and rewards of Cospas-Sarsat are the same -- saving lives," said retired Navy Vice Adm. Conrad C. Lautenbacher, Ph.D., undersecretary of commerce for oceans and atmosphere and NOAA administrator. "The system is exceptional in that it piggy-backs the search and rescue instrumentation provided by Canada and France on

NOAA's environmental satellites. People from countries around the world can reap the benefits this technology provides."

In addition to the satellites, the Cospas-Sarsat system consists of emergency distress-alerting beacons carried on aircraft, ships and persons, ground receiving stations (also called Local User Terminals), Mission Control Centers and Rescue Coordination Centers. When an aircraft, ship or person is in distress, an emergency beacon is activated either automatically or manually. The beacon transmits a distress signal to the satellites. The signal is then forwarded to a Mission Control Center where it is combined with position and registration information and passed to SAR authorities at a Rescue Coordination Center.

In the United States, NOAA operates 14 Local User Terminals in seven locations. There are two LUTs in each of the following locations: Suitland; Houston, Texas; Vandenberg AFB, Calif.; Fairbanks, Alaska; Wahiawa, Hawaii; San Juan, Puerto Rico; and Andersen AFB, Guam. There are currently 39 LUTs in operation worldwide with several more being built each year. This year and next, NOAA will upgrade its LUTs throughout the country.

The U.S. Mission Control Center (USMCC) in Suitland obtains the location information from the ground receiving stations. The USMCC combines this information with other satellite receptions (from other ground stations and MCCs), further refines the location and generates an alert message. This alert is then transmitted to the appropriate Rescue Coordination Center based on the beacon's geographic location and/or identification. If the location of the beacon is in another country's service area, the alert is transmitted to that country's MCC. This is possible because all Cospas-Sarsat MCCs are interconnected through nodal MCCs that handle data distribution in a particular region of the world. Currently, there are 24 MCCs worldwide (five are nodal MCCs operated by the United States, France, Russia, Japan and Australia). Although the operation is continuously staffed, the vast majority of alert data distribution is handled automatically.

Once the Rescue Coordination Center is alerted, it begins the actual SAR operation. In the United States, these rescue centers are operated by the U.S. Coast Guard for incidents at sea, and by the U.S. Air Force for incidents on land. In the case of NOAA-registered 406 MHz beacons, the RCC telephones the beacon's owner and/or emergency contact, and if it cannot determine that the signal is a false alert, it dispatches SAR teams to locate the aircraft or vessel in distress.

SAR forces are dispatched by either the U.S. Air Force, the U.S. Coast Guard or local SAR personnel depending on the origin and location of the emergency signal. In the United States, SAR forces can include military, Coast Guard, Civil Air Patrol or local SAR teams. These SAR forces use fixed wing aircraft, helicopters, ships, boats, search parties and sometimes commercial ships to find the persons in distress and bring them to safety.

There are approximately 285,000 406 MHz beacons currently in use worldwide Of those, more than 87,000 have been registered in NOAA's beacon database. There are approximately 590,000 121.5 MHz beacons in use worldwide. Of those, 260,000 are in use in the U.S., primarily on small aircraft.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and providing environmental stewardship of our nation's coastal and marine resources. To learn more about NOAA, please visit http://www.noaa.gov. To learn more about NOAA's role in the Cospas-Sarsat program: http://www.sarsat.noaa.gov
Visit the international Cospas-Sarsat program at: http://www.cospas-sarsat.org